I
The buoyancy of the air amounts, therefore, to about 8 kilogrammes for the square metre, or 8 millimetres of Water*

3. BUOYANCY OF WASTE GASES*

As a basis for the calculation of the buoyancy of the waste gases a U tube can be taken, the length of the branches of which are equal to the height of the chimney, in the foregoing case amounting to 40 metres.

At 0° and 760 millimetres -'-Gas and Airports barometer, the waste gases should have a weight of 1*36 kilogrammes per cubic metre; and be at d and h (vide Fig. 6) at 1,700°; at Z at a mean of 700°; and thus in the portion d h I pass through the system at 1,200°, whilst the mean
temperature in the chimney Im amounts to 600°. The weight
of the gas column in the right branch is
31 cubic metres of air xl'29,37= 40 kilogrammes. 9 cubic metres of gas at 1200°™
__ i___\J_____eji _ jMean of outlet
^^^m____^s from regenerator
FIG. 6.
5*4 times volume 9 X-^-r
0'4
= 2'3 kilogrammes.
a
Total weight 42*3 kilogrammes.
In the right branch the waste gases are at 600°. Their volume amounts, therefore, to 3*2 times their volume at 0°,
1*36 and their weight -^-=0-43 kilogramme per cubic metre.
~o' 2t
It therefore follows that the weight of the entire column of waste gases in the left branch per square metre section = 40x0-43 = 17-2 kilogrammes.